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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,935	06/08/2001	Hannu T.T. Toivonen	BP101729	8397

466 7590 04/19/2004

YOUNG & THOMPSON  
745 SOUTH 23RD STREET 2ND FLOOR  
ARLINGTON, VA 22202

EXAMINER
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ZEMAN, MARY K

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,935

Applicant(s)

TOIVONEN ET AL.

Examiner

Mary K Zeman

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 22-40 are pending in this application. Claims 1-21 have been canceled. Claims 22-40 are newly added.

Applicant's arguments filed 1/30/04 have been fully considered but they are not completely persuasive. Any rejection not repeated below has been withdrawn.

The declaration of M. Herr under 37 CFR 1.132 filed 1/30/04 is sufficient to overcome the rejection of claims 1-21 based upon Toivonen et al. under 35 USC 102(a).

#### ***Claim Rejections - 35 USC § 101***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 22-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicant argues that new claims 22-38 are claiming statutory subject matter, as the preamble of the claim is directed to "gene mapping" and that the steps of the method therefore provide a concrete tangible and useful result. These arguments are not persuasive, as the steps of the methods merely manipulate or analyze data already present in a database, leading to a score which must be further manipulated and/or acted upon to be useful, which does not meet the standard for concrete, tangible and useful. The "evaluating" step of claim 22 (or any of the dependent claims) does not clearly map a gene, or phenotype to a particular chromosomal location.

#### ***Claim Rejections - 35 USC § 112***

Claims 22-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant asserts that new claims 22-40 obviate the previous rejections made under this statute, and that the claims are properly definite. These arguments are not completely persuasive.

In claim 22 the metes and bounds of the phrase "gene mapping chromosome and phenotype data" are unclear. This phrase does not make sense. It would appear the phrase should read "gene mapping from chromosome and phenotype data" when compared to the title.

Art Unit: 1631

Further in claim 22, it is unclear how the marker patterns can be “expressions within the database” and the claim fails to specifically point out what this data is, or how it is obtained in a positive active method step.

In step iii of claim 22, the metes and bounds of the phrase “mapping... by evaluating” the data are unclear, as the evaluating step fails to clearly map a phenotype to a chromosomal location. Therefore, the evaluation limitation fails to set forth a positive active method step for “mapping.”

In claim 24, it is unclear how the haplotype or genotype “expressions within the database” as required by claim 22, can have “flexible regions”, as set forth in claim 24.

Claims 25-29 each recite computer code. Applicant asserts that this code meets the requirements of MPEP 2106. The examiner is still unable to determine the metes and bounds of these claims. It is entirely unclear if the code must be executed exactly as written, or whether any changes (as small as a move of a slash or indentation) would significantly affect the program and method. These recitations of computer programming are not positive active method steps that clearly further limit the invention being claimed.

In claim 30 it is unclear if the parenthetical expression “(signed)” is intended to be a limitation of the claim, or if it is merely a definition.

In claim 35, the terms “the original region” and “the studied chromosomal region” lack antecedent basis in claim 22. No regions or chromosomes are specifically studied in the claims such that these phrases have basis.

In claim 36, the term “the studied chromosomal region” lacks antecedent basis in claim 22. No regions or chromosomes are specifically studied in the claims such that this phrase has basis.

In claim 37, the metes and bounds of the claim are unclear, as there are no positive active method steps that define the “evaluation or visualization”. What exactly is evaluated and how does that accomplish the mapping. What is visualized, and how does that accomplish the mapping?

It is unclear how the limitations of claim 38 are to be carried out. There is no indication as to how to modify the marker patterns “expressions in the database” to refer to more than one

gene. And it would appear that the multiple gene process isn't truly "simultaneous" as it is an iterative process.

Claim 40 is indefinite as it fails to recite elements which would define the computer system. The only limitations incorporated by the reference to claim 1 are process limitations, and not structural limitations. A computer system is an apparatus: the method performed by the apparatus does not define its structure.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary K Zeman whose telephone number is (571) 272 0723.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P Woodward can be reached on (571) 272 0722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

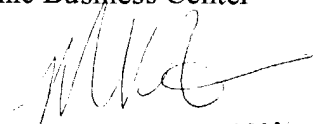
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Application/Control Number: 09/875,935

Page 5

Art Unit: 1631

system or the contents of the electronic file wrapper, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MARY K. ZEMAN  
PRIMARY EXAMINER

4/14/04  
1631